GROWING INSTABILITY OF THE SOCIO-ECONOMIC SYSTEM

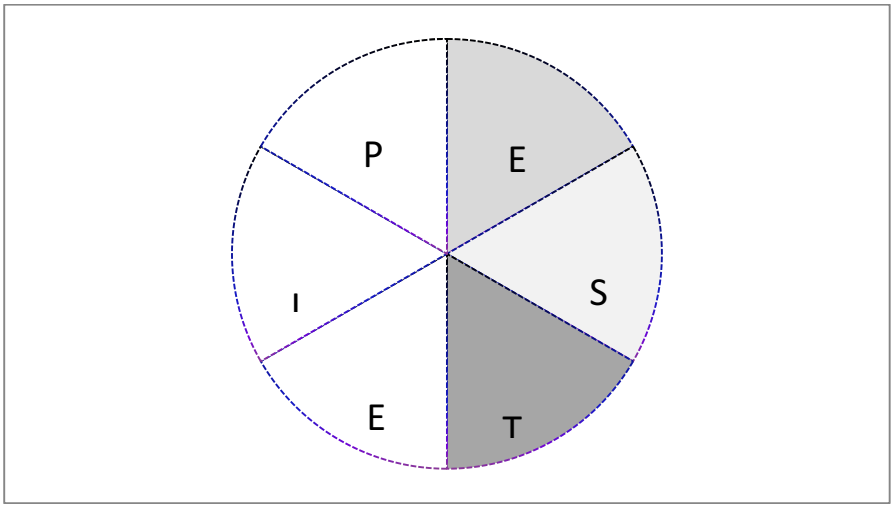
Vulfs Kozlinskis
Prof. emer., Dr.hab.oec, University of Business, Arts and Technology,
Meza iela 3, Riga, LV-1048, Latvia
e-mail: vulfs.kozlinskis@riseba.lv

Abstract
The world is facing a growing instability of its socio-economic system. The socio-economic system is comprised of a number of subsystems that are not progressing at equal paces. This creates instability in the entire system.
Shifting centres of gravity in the global economy, demographic shifts, the financial (including debt) crisis, etc. are only the visible consequences of system development.
Shifting centres of economic (and military) power constitute a permanent factor which works relatively slowly, but in the second decade of the 21st century (and onwards) we must deal with a transforming system with not only quantitative but also various qualitative parameters.
Differences in population growth (among countries and continents) and the "Youth Bubble" contribute to rapidly growing immigration, which is becoming an important instability factor (in countries receiving immigrants, it is connected with tremendous differences in the value system).
Political subsystem weaknesses add to this problem, as politicians who do not pursue the right long-term goals create a situation that eventually results in a crisis.
Nowadays we must deal with a crisis in the whole system and try to rebuild the system.
The paper is conceptual and its aim is to initiate discussion.

Keywords: socio-economic system crisis, instability factors, political subsystem, value system

INTRODUCTION

The aim of this research is to analyse the growing instability of the socio-economic system. The specific research tasks are as follows: 1) to identify key factors contributing to the instability of a socio-economic system; 2) to analyse the latest global trends regarding the instability of the socio-economic system; 3) to identify primary sources of instability and to make some predictions.
According to Norbert Wiener [39], there are very few homeostatic processes in a socio-economic system and the socio-economic system's function is based on principles of game theory; every player, possessing certain information, is usually led by the principles of rationality*;*
Additionally, we must take into account that information volume and asymmetry [1] in the system is growing, and this leads to more mistakes in decision-making and reduces the system's stability. In these conditions, the importance of regulation (long-term government policy), according to Edward Prescott and Finn Kydland (Nobel Prize winners in 2004), is growing.
There is a lack of research studies on this problem with the systems approach, in which scientists try to revise old statements.
Strong evidence of this is the unclear aim(s) of socio-economic system development (stressed by Norbert Wiener in 1961) [39].
The paper employs systems theory and the systems approach in analysing the world's current socio-economic system as well as such research methods as analysis and synthesis, statistical analysis, the monographic method and logical construction.
The socio-economic system, on the one hand, is manageable, while on the other hand it involves self-adjustment elements. Socio-economic systems are complicated systems, as there are a lot of strong and diverse informative, material, etc. interconnections between their subsystems and elements. The subsystems do not all develop at the same pace, which, in turn, leads to instability.



Notes: the shading shows the intensity of change (the darkest shade represents the fastest change); PESTEL (political, economic, social, technological, environmental and legal) analysis

Figure 1. Socio-economic system[1]

The technological, economic[2] and partly social subsystems are developing at higher speeds (especially the technological subsystem). It is possible to try to measure the stability of subsystems.

For instance, stability in an economic subsystem from the aspect of economics may be characterised by the following indicators[3]:

- share: debt/GDP – less than 90%;
- state budget deficit – 2-4 % of GDP (the government budget may not grow at a faster pace than GDP);
- inflation: 3-5%;
- monetary reserves: ~ 8% of GDP;
- debt management: no more than 20% of annual exports;
- military expenses no higher than 4.5% of the budget;
- state investments: above 10% of GDP;
- imports may not exceed 40% of GDP;
- unemployment may not exceed 15-20% of the labour pool.

We understand these indicators as warning signals which show the results of the influence of a number of factors, including factors from other subsystems (political, legal, technological, etc.).

Countries exceed the critical levels, and the abovementioned indicators, in turn, are to a varying degree a result of policies (economic, demographic, etc.). It will be useful to elaborate stability indicators for other subsystems.

We must take into account that there exist some factors that in the long term deeply influence the whole socio-economic system; nowadays, the main one is demography [18], [21], etc.

Differences in the birth rate and the growing (or decreasing) population and changes in the demographic structure lead to changes in the population, growing immigration, etc.

The key factors contributing to the instability of a socio-economic system, in the author's opinion (and according to a number of research papers in the first fifteen years of the 21st century), are shifting centres of gravity of the global economy, the financial (including debt) crisis and demographic shifts.

The number of references[4] to these three factors shows the increasing trend of focusing on them. We must take into account that nowadays (as one of the results of globalisation) all these factors work globally at different speeds.

[1] The figure is based on M. Porter's concept of dividing a system into subsystems and is connected with the aim of the research, too. For instance, M. A. El-Erian [10] separated the economic and financial subsystems.

[2] The development of a pre-emptive economic system was stressed by Z. Bauman (in interviews (2010-2011) and personal conversations (2011)). Historically, one of the first scientists who discussed (using different terminology – productive forces and productive powers) the idea of the different speed of development of economic subsystem parts was Karl Marx [22].

[3] The indicators are collected as averages from different sources (for instance, [29]) and we must look to them only as a source of warning (not as strict rules), because the results of exceeding these indicators differ across different countries.

[4] The importance of the abovementioned factors was verified by employing the Google search engine and library databases (academic journals, books and e-books) to identify the number of references to the factors – their keywords: "debt crisis", "financial crisis",

Research limitations

The research is mainly based on literature studies and secondary data.
Instability factors were used as cases without going into details.
The main period of analysis is 2000-2015 (1970-2015 for long-term factors).
The main aim of the research is the recognition of new directions for further research studies.

Research results and discussion

1. SHIFTING CENTRES OF GRAVITY OF THE GLOBAL ECONOMY

The table below shows data for some economic centres of gravity – GDP per capita[5] and economic growth rates.

Table 1

GDP per capita (in thousands of USD) for the G-7, the BRICS and regional powers

	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
USA	44.7	46.4	47.0	45.7	47.2	49.9	51.7	53.0	**54.6**
Japan	34.1	34.3	38.2	39.5	43.1	46.1	46.7	38.6	36.2
Germany	36.4	41.8	45.7	41.7	41.8	45.9	44.0	45.6	**47.8**
UK	42.5	48.4	45.2	37.2	38.3	41.0	41.3	42.3	46.3
France	36.5	41.6	45.4	41.6	40.7	43.8	40.9	42.6	42.7
Italy	33.4	37.7	40.7	37.0	35.9	38.4	34.8	35.4	35.2
Canada	40.2	44.3	46.4	40.8	47.5	52.1	**52.7**	52.3	**50.2**
Brazil	5.8	7.2	8.6	8.3	10.7	12.6	11.3	11.7	11.4
Russian Federation	6.9	9.1	11.7	8.6	10.4	13.3	14.0	**14.5**	12.7
India	0.9	1.1	1.1	1.2	1.5	1.5	1.5	1.5	1.6
China	**2.1**	2.7	3.4	3.7	4.4	5.4	6.1	7.0	**7.6**
Poland	9.0	11.2	13.9	11.4	12.6	13.9	13.1	13.8	14.3
Turkey	7.7	9.3	10.4	8.6	10.1	10.6	10.6	11.0	10.5
Indonesia	1.6	1.9	2.2	2. 3	3.1	3.6	3.7	3.6	3.5
Nigeria	1.0	1.1	1.4	1.1	2.3	2.5	2.7	3.0	3.2

Sources: World Bank, International Comparison Program database

In the last 10 years, some countries doubled their GDP per capita and some tripled it. As a result, the share of the leading (for around 100 years) world economy – the US economy – decreased (it is still the world's leading economy and changes in this economy influence the rest of the world). Reasonable progress was demonstrated by the Canadian economy, which had one of the highest GDPs per capita in the world in 2011 and 2012.

Unlike the G-7 countries[6] (mostly European countries), which are developed countries with a high GDP per capita and demonstrated limited growth at 1-3% a year, the other countries represent the emerging market and developing economies with considerably lower GDP per capita figures and are growing much more quickly.

Special attention must be paid to regional forces: the countries with growing economies and populations (for instance, Poland, Turkey, Indonesia and Nigeria). For example, Poland became a regional leader in Eastern Europe with a fast-growing economy and, as a consequence, with growing political influence (and possibilities for increasing military power). We can expect that the economic growth of the countries that are regional leaders will continue and the "regional powers" will play a larger role not only in the regions.

Compared with the developed countries, the emerging market economies present, on average, much higher growth rates. On the other hand, growth rates in these countries are less stable (Brazil, Russia).

We can observe the growing economic power of developing countries (especially in Eastern Asia) and as early as in 2008, El-Erian [10] concluded that the growing influence of countries was not so important

"demographic shift" and "economic centre of gravity".

[5] GDP per capita as a development index has a lot of drawbacks (for instance, the size of an economy as such and the structure of GDP, etc., are important).

[6] After a historically short period (20-30 years), if the trends are the same, maybe only Germany (of all European countries) will be among the top 10 most developed countries in the world, hence the importance of the European Union's existence.

in the 20th century and this influence will grow further. The demographic and economic centre of gravity is moving towards Eastern Asia.
There exists a less distributed evaluation of the situation based on the fact that among top companies, China's gains are relatively minor given the significant outperformance of its stock market relative to major western markets [24]. This aspect may be important in the evaluation of other quickly developing countries.
A relatively new trend is that the influence of "hydrocarbon countries" is decreasing [10].
As we can see in Table 2, the trend of faster growth in some countries (for instance, China, India) continues. Therefore, the share of economies of currently developed countries in the world is decreasing.

Table 2

GDP growth (annual %) for the G-7, the BRICS and regional powers

	2000	2005	2010	2012	2013	2014	2015
USA	**4.1**	3.0	2.5	2.3	1.5	2.4	2.6
Japan	2.3	1.3	4.7	1.8	0.8	1.6	0.6
Germany	3.0	0.7	4.1	0.4	0.4	1.6	1.5
UK	3.8	3.0	1.5	1.2	1.7	2.8	2.5
France	3.9	1.6	2.0	0.2	0.7	0.2	1.2
Italy	3.7	0.9	1.7	-2.8	-1.7	-0.4	0.8
Canada	5.1	3.2	3.4	1.9	2.0	2.4	1.2
Brazil	4.3	3.2	7.5	1.8	2.7	0.1	**-3.0**
Russian Federation	**10.0**	6.4	4.5	3.4	1.3	0.6	**-3.9**
India	**4.0**	10.5	9.7	5.1	6.9	7.3	**7.3**
China	**8.4**	11.3	10.4	7.8	7.7	7.3	**6.8**
Poland	4.3	3.5	3.7	1.6	1.7	3.4	3.5
Turkey	**6.8**	8.4	9.2	2.1	4.2	2.9	**3.0**
Indonesia	4.9	5.7	6.2	6.0	5.6	5.0	4.7
Nigeria	5.3	3.4	7.8	4.3	5.4	6.3	4.0

Sources:
1) World Bank national accounts data and OECD National Accounts data files (data for 2012)
2) CIA Factbook (2013-2015)

Shifts of economic centres of gravity lead to subsequent shifts in military power (e.g. China) and make our socio-economic system less stable for the next decade(s).
Shifting centres of economic and military power are a permanent factor which works relatively slowly. Nowadays some of these changes are leading to qualitative changes and affecting the entire system. We can say that in the second decade of the 21st century (and onwards) we must deal with a transforming system with not only quantitative but also various qualitative parameters. But international organisations which were created in the 20th century have not been changed according to the new situation.
China, India, Brazil [34] and in the future the other countries must play a larger role, at least in world forums. It is necessary to understand that growth (economic, political and military power) offers these countries the possibility to establish new international organisations, and this again influences the entire socio-economic system, including the political subsystem.

2. FINANCIAL (INCLUDING DEBT) CRISIS

The financial (including debt) crisis expanded in the last two decades, first, as growing general government debts and, second, through bubbles in different markets, mostly the real estate and securities markets (we will observe only debt problems). In the period of 2007-2015, we can observe (Table 3) growing general government debts in the majority of countries. Among the 16 analysed countries, only three (India, Turkey and Indonesia) achieved a declining government debt.

Table 3

General government debt (% of GDP) for the G-7, the BRICS and regional powers

	2007	2008	2009	2010	2011	2012	2013	2014	2015
Japan	**162.4**	171.1	188.8	193.2	209.4	215.4	220.3	226.1	**229.2**
Italy	103.3	106.1	116.4	119.3	120.7	127	133	132	135.8
USA	**64.8**	76	87.1	95.2	99.4	100.8	101.2	103.0	**104.2**
France	**64.2**	68.2	79.2	82.4	85.8	90.2	93.4	95.5	**98.2**
Canada	66.5	71.3	81.3	83.1	83.5	88.1	87.7	86.5	95.4
UK	**43.7**	51.9	67.1	78.4	84.3	88.7	91.1	88.1	**90.6**
Germany	65.2	66.8	74.5	82.5	80	81	79.9	74.3	71.1
Brazil	56.7	56.0	59.2	51.8	51.3	53.8	51.7	57.2	67.3
India	**74**	74.5	72.5	67.5	68.8	67.7	66.2	66.4	**51.7**
China	34.5	31.6	36.9	35.1	35.3	36.9	39.5	41.1	43.9
Poland	45	47.1	50.9	54.9	56.2	55.6	48.2	43.7	43.4
Turkey	39.9	40.0	46.0	42.3	39.1	36.2	36.1	33.5	33.1
Indonesia	32.3	30.2	26.5	24.5	23.1	23.0	24.9	25.0	27.7
Russian Federation	7.2	6.5	8.3	9.3	9.8	11.8	13.1	16.3	17.7
Nigeria	12.8	11.6	15.2	18.0	17.8	19.0	11.0	10.5	11.7

Sources:

1) Trading Economics, World Bank national accounts data, and OECD National Accounts data files
2) Eurostat, CIA Factbook (most data for 2015)

We can observe (Table 3) that in fact the world's leading countries (the G-7) increased their government debts, while the BRICS countries are on a lower debt level.

The leading countries increased their general government debts. The problem of growing general government debts becomes crucial if the external debt exceeds 60% of GDP [29] because this leads to negative changes in the state budget structure, as a larger part of the budget must be spent on servicing the government debt.

A perfect analysis of the reasons for growing government debts (the case of the USA) made by D. Walker [38] offers simple recommendations – expenses have to be cut (spending according to the budget size). According to D. Walker, if nothing is done, at the latest by 2030 the USA could face a financial collapse.

Three important remarks: the precondition for cutting expenses is political will and the support of society; a serious argument against cutting expenses is growing government budget deficits and the increase in total debt in a few important world states, which in any case deeply affect the world financial system and make all socio-economic systems less stable; it is possible to increase government debts (annual budget deficits are allowed) in the short term (2-4 years) in case this leads to the development (recovery) of the economy, for instance, through government investments in infrastructure.

The reason why governments increase their debts (making their annual budgets with a deficit) is simple enough. Along with the hope of stimulating the economy, an important role is played by short-term goals (one of them is to be re-elected).

An extremely important factor that nowadays influences the financial system and, through it, the whole socio-economic system, is the growing unregulated role of central banks [11]. Failures in the performance of the financial subsystem (as a result of lack of necessary regulation and as a result of the weakness of the political subsystem) make the entire socio-economic system less stable.

3. DEMOGRAPHIC SHIFTS AND POPULATION

Table 4

World population by continent, millions

Continent/year	1970	1980	1990	2000	2005	2010	2015
Asia	2120.4	2625.6	3202.5	3714.5	3944.7	4169.9	4393.3
Africa	365.6	478.0	631.6	814.1	920.2	1044.1	1186.2
Europe	657.2	693.9	721.1	726.4	729.0	735.4	738.4
North America	326.0	376.4	429.7	490.8	517.5	546.9	573.8
South America	193.5	242.9	297.9	349.8	374.8	397.1	418.4
Australia and Oceania	19.7	23.0	27.0	31.1	33.4	36.4	39.3
Total	3682.5	4439.6	5309.7	6126.6	6519.6	6929.7	7349.5

Source: United Nations

The difference in the rates of population growth among continents and countries in the last 50 years changed our world dramatically. The population grew three times in Africa and two times in Asia, South America, Australia and Oceania, while in Europe the population growth from 1970-2015 was only 12.3%. Taking into account the standard of living, political instability and, in extreme cases, warfare, immigration to Europe exploded, and it is easy to predict (if the "rules" are the same) a further increase in immigration to Europe[7] and North America. Rapidly growing immigration leads to instability in immigration destination countries and changes the political situation as well.

Research studies on immigration show that the total effect of immigration of low educated individuals and people without capital is negative [14; 15]. A less researched aspect of immigration is the compatibility of value systems [17]. Already in 1970 C. W. Graves stressed that "to each state is associated a particular value system…"

The existing situation is partly a result of faulty long-term policy (which is based on faulty statements) – the supply of food versus the decreasing birth rate in poor countries with high birth rates.

According to G. Heinsohn [18, 19], the problem is not only growing populations but also demographic shifts.

Criteria for the shifts [18]:

- a youth bulge exists when 30% of the men in a population are between 15 to 29, i.e. if you take 100 males from a country, 30 of them will be in this age range;
- a demographic capitulation is when per every 100 males aged 40-44, there are less than 80 boys aged 0-4.

Among the analysed countries, the worst demographic situation was observed in Germany, Italy and Japan. Over more than a decade, the demographic situation deteriorated in Italy and Japan, and only Germany has presented a slight improvement in this respect during the last few years (thanks to immigration and higher birth rates among immigrants). Canada shifted from a demographic capitulation situation, which was observed until 2010, to a demographic armament situation with a ratio of 100/82[8]. The same goes for Poland and Russia.

A stable demographic armament situation for more than a decade has been observed in France, the USA and the UK, with the highest ratios being presented by India, Turkey, Brazil and South Africa.

According to G. Heinsohn, a youth bulge contributes to higher crime rates. To verify this assertion, a correlation analysis was performed for the selected countries. The correlation was calculated between the number of males aged 15-29 years per 100 males aged 40-44 years and intentional homicide rates. For the analysed countries with demographic capitulation and armament, the correlation coefficient was equal to **0.79**, which shows a strong positive relationship between a country's youth bulge and its homicide rate.

[7] Top 6 (immigration in 2014 more than 100 000 people a year) among EU countries: Germany, France, Italy, Poland (with a different immigrant composition), the Netherlands and Belgium. All these countries, excluding Poland and partly the Netherlands, demonstrated a growing number of incidents in which immigrants took part.

[8] **Canadian experience in improving the demographic situation must be more carefully studied.**

Table 5

Number of males aged 0-4 and 15-29 per 100 males aged 40-44 for selected countries

Country	2012		Average for 2000-2012 (0-4)
	0-4	15-29	
Capitulation or on the verge of it			
Italy	100/59	100/322	100/61
Germany	100/57	100/374	100/54
Japan	100/56	100/340	100/69
China**	100/64	100/252	-
Demographic armament			
South Africa*	100/208	100/935	100/202
India***	100/154	100/295	-
Turkey	100/127	100/632	100/140
Brazil	100/113	100/649	100/140
USA	100/98	100/519	100/93
Russia	100/95	100/557	100/73
France	100/91	100/437	100/90
UK	100/91	100/460	100/84
Poland	100/86	100/557	100/76
Canada	100/82	100/489	100/71
Extreme demographic armament			
Gaza Strip	100/464		-
Afghanistan	100/403		-
Iraq	100/351		-
Somalia	100/364		-

** - for 2010; **- for 2013; ***- for 2011*

Sources: OECD database; China Statistical Yearbook 2014; World Bank database; 2011 Census of India

Additional non-direct evidence of the negative influence of a "youth bubble" is the fact that a permanent war situation really exists in all countries with extreme demographic armament. These facts allow us to conclude that in order to solve these problems, changes are necessary in international policy.

What is common for the three instability factors is their connection with failures of the political subsystem,[9] which did not change in line with tremendous changes in the other subsystems. It is very important that the political subsystem does not use social science research results[10] (at least for the last 100 years). For instance, Paretto [26] warned about the "dangers of democratic order" in the second decade of the 20th century.

Nowadays, a problem related to the performance of the political system is the "increase in the number of people dependent on the state" [36]. In combination with the wish of politicians to maintain their power, it creates an essential negative effect on the political, economic and social subsystems and on the whole socio-economic system. Seeking deeper reasons for it, one can put forward a hypothesis about the connection with the dominant value system[11] of the majority of the public.

[9] A strong point for discussion about the existing political subsystem: if we assume that Paretto's principle [26] is universal and useful for a democratic system for the purpose of exploring the performance of the democratic system, this means that 20% of voters (their interests) determine the outcome of any elections. Maybe it is possible to discuss an election system reform which is connected with taxes paid and the number of votes.

[10] For instance, Nobel Prize winner J. Buchanan [4; 5] synthesized the theories of political and economic decision-making. According to J. Buchanan, politicians pursue mostly short-term goals – to be re-elected – and to achieve this, they manipulate their society. They behave selfishly and act, to some extent, out of self-interest, seeking to get as many votes as possible and to have high positions of power or large budget allocations.

The political subsystem is not able in a proper way to use the results of extremely important research studies in social science (Pareto [26], Norbert Wiener [39], James Buchanan [4; 5], Robert Mundell (1999 Nobel Prize in economics), G. Heinson [18] and many other researchers).

[11] The stability of any socio-economic system is affected by value systems. A pioneer in researching value systems was C. W. Graves, and followers include D. E. Beck and C. Cowan. A significant contribution to this research field was made by S. E. Dawlabani et al. [8].

To finalise…

Many researchers try to explain the growing instability with: long economic cycles [20]; international conflicts and patterns of leadership [9]; oil prices [31]; and technological cycles [32]. However, it might be that the problem is much deeper: quantitative changes in the socio-economic system have caused qualitative changes, and instability is permanent for the socio-economic system.

Our short analysis of the three abovementioned instability factors showed that the sources of instability are different speeds of changes in the subsystem; for instance, the economic subsystem is developing much more quickly than its regulation (which depends heavily on the political subsystem)[12].

We can observe failures of political systems in practically all countries. And the sources of this are connected with the value system.

It is necessary to improve the political subsystem because it has to perform a very important task – it is imperative to shift to the long-term development model and withdraw from expansion [34].

Hence, arguably a new socio-economic system is emerging, potentially bringing back dynamic stability, yet this time for a comparatively long period of time.

CONCLUSIONS

1. The instability of the socio-economic system is permanent because the subsystems are changing at different speeds, and, in a certain period, a situation arises in which quantitative changes accumulate so much that the system changes qualitatively and a new system emerges.
2. The world socio-economic system is in crisis, and we cannot explain this situation with long or middle-term cycles or patterns of leadership, etc.
3. The main instability factors are long-term factors: shifting centres of economic gravity, including the emergence of new regional economic gravity centres (regional powers), financial crises (including debt crises) and population growth with demographic shifts. Nowadays, instability factors work globally; therefore, a problem solution is possible at a global level.
4. A fast-growing population and demographic armament are very serious factors of instability in our socio-economic system and these factors work locally (through increasing crime) and globally (through immigration). The way to solve the abovementioned problems is connected with necessary changes in policies, including international policy.
5. The political subsystem is the weakest part of the socio-economic system and failures of this subsystem are an additional source of instability. The existing model of democracy must be changed. As a hypothesis, we can assume that Paretto's principle is usable in explaining the performance of the political subsystem. This means that 20% of voters determine the results of elections.
6. The political subsystem is not ready to use many social science research results, including warnings about the existing model of democracy.
7. The existing socio-economic system does not work properly, and the germs of a new system are emerging. It is a painful process. Therefore, a proactive policy has to be created. This proactive policy has to include global governance elements, including new or altered international organisations.
8. As history shows, changing the socio-economic system is a long and painful process. This means that we can predict a relatively long period of growing instability.

The same ideas were proposed earlier by researchers who used different terminology (the same ideas, for instance, were proposed by Z. Bauman [2], who used the term "culture").

[12] We get the same results after studying the case of economic development problems in Latvia [35].

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